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**Manitoba Education Research Network (MERN) in partnership with the Centre for Research in Youth, Science, Teaching and Learning (CRYSTAL)**

# Supporting the Professional Growth of Francophone Science Teachers: A Progress Report on Several Initiatives

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Research Forum on Science, Teaching and Learning
at the University of Manitoba on
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# Major Objectives of Our Project

- To determine the risk and protective factors impacting on the teaching of science in the francophone minority language context.

- To develop and implement professional development strategies that addresses the identified needs of science teachers in this context.

- To explore how technology can be used to develop and sustain the P.D. strategies.

- To develop pedagogical strategies that promote reading and writing in the teaching and learning of science.

# Development team

**Léonard Rivard** – Dean, Faculty of Education Director of Research: CUSB

**Danièle Dubois-Jacques** – Science Consultant: BEF

**Deny Gravel** – Middle and Senior Years Coordinator

**Rodelyn Stoeber** - Professor, Faculty of Education: CUSB

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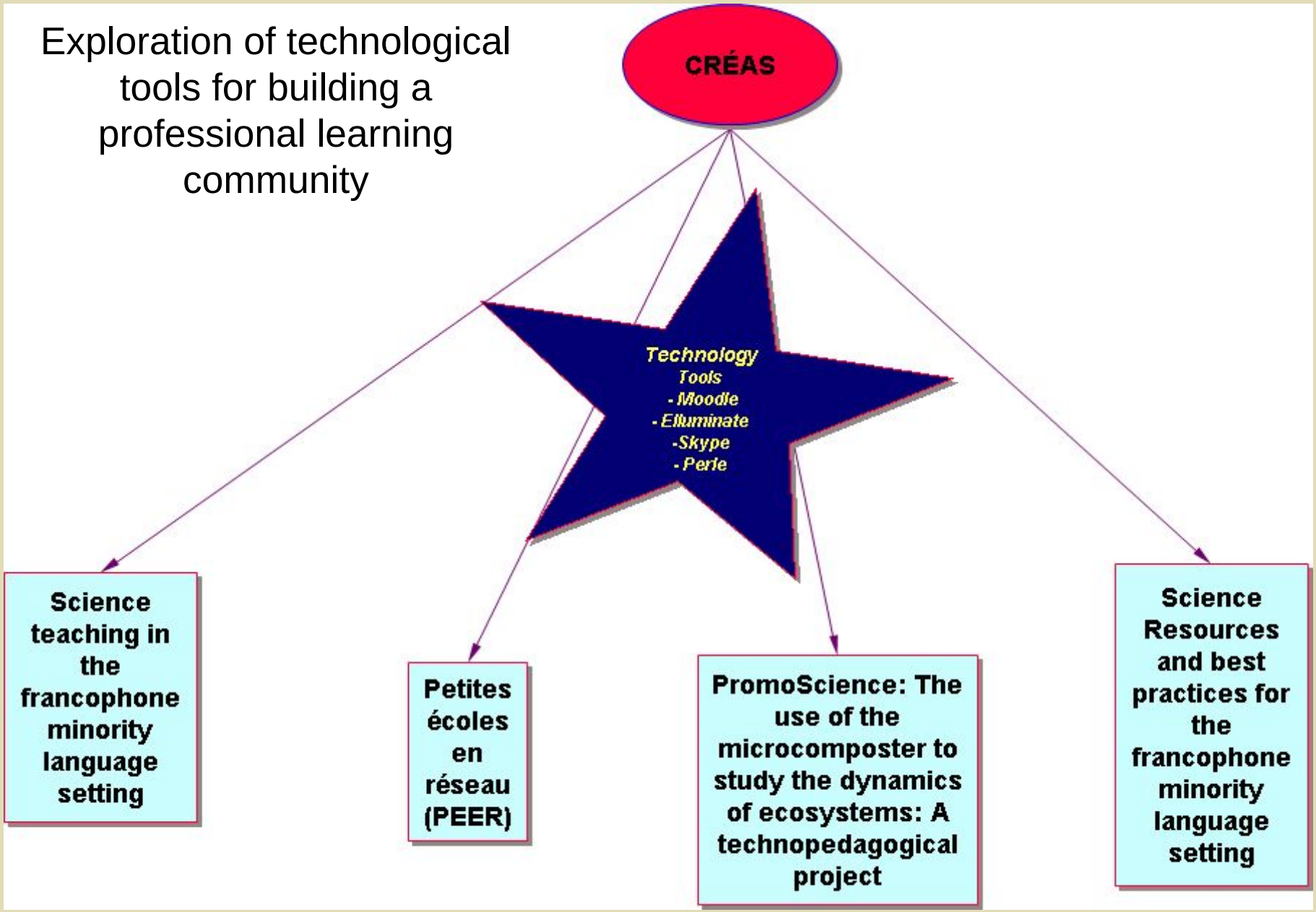
# Exploration of technological tools for building a professional learning community



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# Science teaching in the francophone minority language setting : Project Progress

Identification of the risk and protective factors impacting science teaching in the francophone minority language context.

Identification of the teacher needs for professional development regarding science issues and concepts in the minority language.

Elaboration of a professional development evaluation instrument

# Implementation of PD strategy

Whole group workshops (2-3/year)

- Nature of science (science cluster - Exploration of the Universe

Study group

-Laboratory security, preparation and strategies

Special projects

- PEER (Petites écoles en réseau) – sponsored by Industry Canada (Francommunautés virtuelles and Imperial Oil
- The use of the microcomposter to study the dynamics of ecosystems: A technopedagogical project sponsored by le Conseil de recherches en sciences naturelles et en génie du Canada (CRSNG/ NSERC) - PromoScience .

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# Implementation of PD strategies

French resources: Science Resources and best practices for the francophone minority language setting

Creation of a community of professional learners

- Moodle
- Elluminate
- Skype

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# Project PEER (Petites Écoles En Réseau)

Creation of a virtual learning community for the purposes of:

- addressing the needs of small, rural schools
- giving teachers the opportunity to teach using their areas of expertise and promote sharing of expertise
- enhancing programs and curriculum
- enriching the learning environment of students - group learning, access to experts and mentors
- exploring the roles of the teacher and the student in this context
- creating a relevant strategy and model with regards to the teaching of science and other curricula for small rural schools

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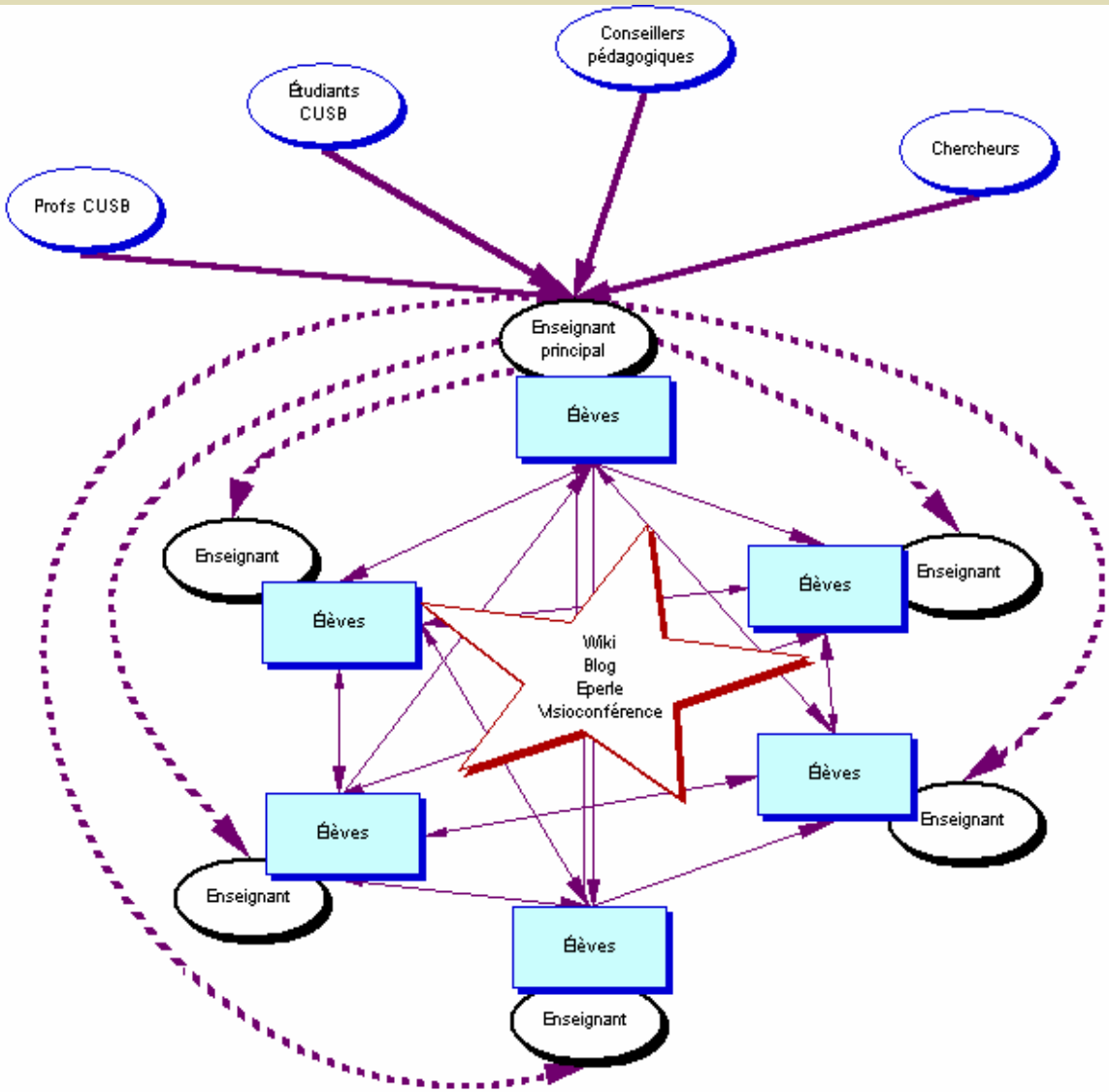
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# Delivery of the Professional Development

Completion of the pilot study : science cluster – Nature of electricity

Data collection and analysis

# The use of the microcomposter to study the dynamics of ecosystems

- **Students have the opportunity to study the composting process in the science classroom using a prototype microcomposter.**
- **They will observe and test the factors impinging on the decomposition of organic matter and the recycling of these elements into the ecosystem**
- **The microcomposter will be used as a teaching tool for the acquisition and learning of the scientific principles and will emphasize the importance of sustainable development and the protection of the environment.**
- **The use of technological tools will be used to facilitate and motivate students to create a collaborative learning environment.**

# Progress

- Pilot project completed
- Analysis of the data collected from the pilot project
- 4 other schools added
- Refinement of experimental protocols
- Development of a model of professional development support between teachers, scientists and other educational professionals